

CLAIMS

1. A camera assembly, comprising:
 - a camera housing having a receptacle portion, wherein the receptacle portion has a bore with an inside diameter;
 - a lens barrel having an outside diameter and positioned in the bore of the receptacle; and
 - at least two bushing portions disposed on the outside diameter of the lens barrel;wherein the outside diameter of the lens barrel is smaller than the inside diameter of the bore of the receptacle portion; and
wherein the bushing creates an interference fit with the inside diameter of the bore of the receptacle to axially align the lens barrel with the receptacle portion.
2. The camera assembly according to claim 1, wherein the lens barrel has at least two grooves in the outside diameter, wherein the bushing portion is positioned in the groove.
3. The camera assembly according to claim 1, wherein the at least two bushing portions comprises:
 - a first bushing portion; and
 - a second bushing portion spaced from the first bushing portion along an axis of the lens barrel.
4. The camera assembly according to claim 3, further comprising an adhesive positioned between the first bushing, the second bushing, the outside diameter of the lens barrel, and the inside diameter of the bore of the receptacle portion.

5. The camera assembly according to claim 3, wherein the first bushing portion and a second bushing portion apply a substantially equal elastic force on the lens barrel to align an axis of the lens barrel with an axis of the receptacle.

6. The camera assembly according to claim 1, further comprising an end portion positioned at one end of the lens barrel that is distally located from the receptacle portion, wherein the end has an outside diameter that is greater than the inside diameter of the bore of the receptacle portion such that the end portion is unable to enter the inside diameter of the bore of the receptacle portion.

7. A camera kit comprising:
a camera housing having a receptacle portion, wherein the receptacle portion has a bore with an inside diameter;
a lens barrel having an outside diameter, the lens barrel including:
at least two bushing portions disposed on the outside diameter of the lens barrel; and
wherein the outside diameter of the lens barrel is smaller than the inside diameter of the bore of the receptacle portion; and
wherein the lens barrel is adapted to be positioned in the bore of the receptacle portion, such that the bushing portion creates an interference fit with the inside diameter of the bore of the receptacle portion to axially align the lens barrel with the receptacle portion.

8. The camera kit according to claim 7, wherein the lens barrel has at least two grooves in the outside diameter, wherein the bushing portion is positioned in the groove.

9. The camera kit according to claim 7, wherein the at least one bushing portion comprises:
- a first bushing portion; and
 - a second bushing portion spaced from the first bushing portion along an axis of the lens barrel.
10. The camera kit according to claim 7, further comprising:
- an adhesive;
 - wherein the receptacle portion further comprises an aperture; and
 - wherein the adhesive is adapted to be injected through the aperture to affix the lens barrel to the camera housing.
11. A lens barrel comprising:
- a mating shaft portion having an outside diameter; and
 - at least two bushing portions disposed on the outside diameter of the mating shaft portion.
12. The lens barrel according to claim 11, wherein the mating shaft portion has at least two grooves in the outside diameter, wherein the bushing portion is positioned in the groove.
13. The lens barrel according to claim 11, wherein the at least two bushing portions comprise:
- a first bushing portion; and
 - a second bushing portion spaced from the first bushing portion along an axis of the mating shaft portion.

14. The lens barrel according to claim 11, further comprising an end portion, wherein the end portion has an outside diameter that is greater than the outside diameter of a remainder of the mating shaft portion.

15. The lens barrel according to claim 11, wherein the mating shaft portion is adapted to be adhered to a camera housing.

16. A method for assembling a lens barrel into a camera housing, comprising:

providing a camera housing having a receptacle portion, wherein the receptacle portion has a bore with an inside diameter;

providing a lens barrel having an outside diameter and at least two bushing portions disposed on the outside diameter of the lens barrel, wherein the outside diameter of the lens barrel is smaller than the inside diameter of the bore of the receptacle portion, wherein an outside diameter of the bushing is larger than an inside diameter of the bore of the receptacle portion;

pressing the lens barrel into the bore of the receptacle portion to create an interference fit, between the at least one bushing, and the inside diameter of the bore of the receptacle portion; and

wherein the at least two bushing portions are adapted to substantially align the lens barrel along a substantially same axis as the bore of the receptacle portion.

17. The method according to claim 16, further comprising:

providing an aperture through the receptacle portion after the step of pressing; and

injecting an adhesive through the aperture to adhere to the lens barrel to the receptacle portion.

18. The method according to claim 16, wherein the lens barrel has at least two grooves in the outside diameter, wherein the bushing portions are positioned in the grooves.

19. The method according to claim 16, wherein the at least two bushing portions comprise:

- a first bushing portion; and
- a second bushing portion spaced from the first bushing portion along an axis of the lens barrel.